

When Nothing Matters: Empty-Set Effects in Quantifier Interpretation

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Quantifiers (such as *every*, *more than n*, *fewer than n*, *at least n*, or *at most n*) generally require that their restrictor and scope are not empty. For example, the sentence “Fewer than three squares are red” would be odd to use to describe situation 1) when all squares are blue or 2) when there are no squares at all; even though the sentence is literally true in both cases. This is because the sentence triggers two inferences: that at least one square is red (non-empty scope) and that there are squares (non-empty restrictor). Different linguistic accounts propose that these inferences arise as implicatures (Abusch & Rooth, 2004), presuppositions (Geurts, 2008), or as a result of cognitive bias (Aloni, 2022) or the complexity of the verification procedure (Bott et al., 2019).

In my talk, I will attempt to answer two questions: 1) how these inferences differ from one another and what mechanisms underlie their computation, and 2) how they relate to the development of the concept of zero. I will present behavioral experiments challenging all existing accounts of these inferences. Moreover, I will argue that the mechanism of these inferences might not be purely linguistic but that they are rooted in numerical cognition.